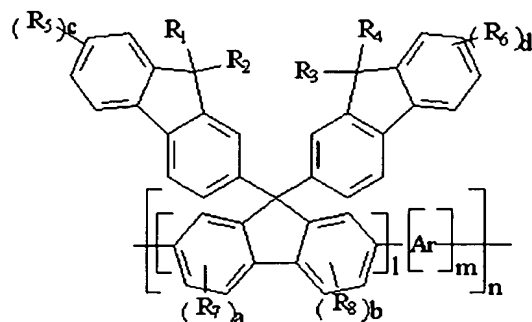


## Claims

- [1] An organic electroluminescent polymer having 9,9-di(fluorenyl)-2,7-fluorenyl unit represented by the following Formula 1:

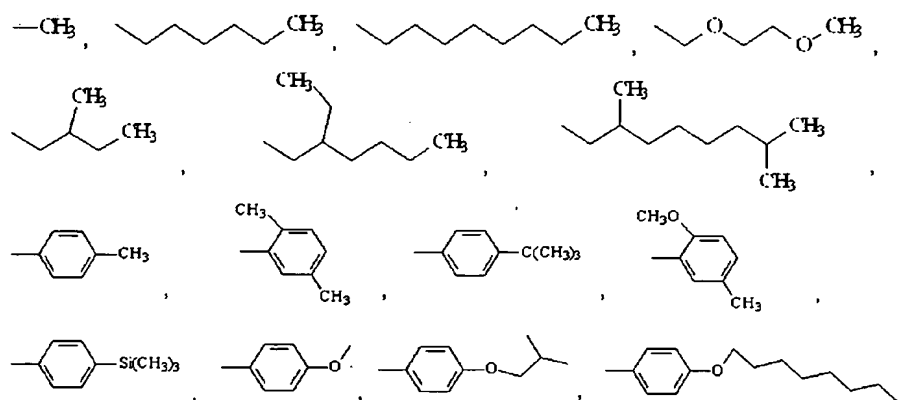
Formula 1

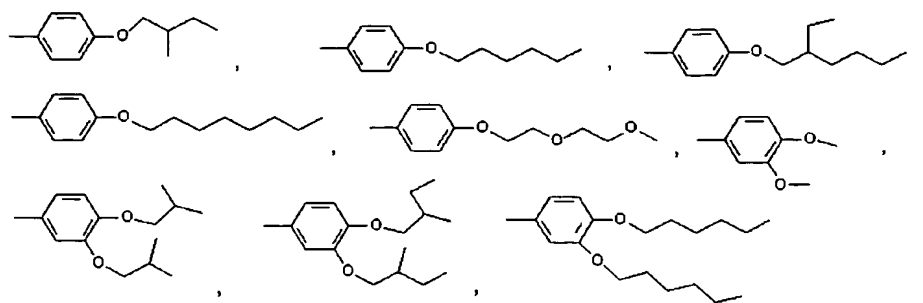


wherein, R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub> and R<sub>4</sub> are the same or different, each being a linear or branched alkyl group of 1-20 carbons; an aryl group which is unsubstituted or substituted with at least one substituent group selected from the group consisting of linear or branched alkyl and alkoxy groups of 1-20 carbons; a linear or branched alkyl group of 1-20 carbons having at least one hetero-atom selected from the group consisting of F, S, N, O, P and Si; an aryl group which is substituted with at least one substituent group selected from the group consisting of linear or branched alkyl and alkoxy groups of 1-20 carbons containing at least one hetero-atom selected from the group consisting of F, S, N, O, P and Si; an aryl group having a heterocyclic moiety of 2-24 carbons which is unsubstituted or substituted with at least one substituent group selected from the group consisting of linear or branched alkyl and alkoxy groups of 1-20 carbons; an aryl group having a heterocyclic moiety of 2-24 carbons which is substituted with at least one substituent group selected from the group consisting of linear or branched alkyl and alkoxy groups of 1-20 carbons containing at least one hetero-atom selected from the group consisting of F, S, N, O, P and Si; a substituted or unsubstituted trialkylsilyl group of 3-40 carbons; a substituted or unsubstituted arylsilyl group of 3-40 carbons; a substituted or unsubstituted carbazole group of 12-60 carbons; a substituted or unsubstituted phenothiazine group of 6-60 carbons; or a substituted or unsubstituted arylamine group of 6-60 carbons; R<sub>5</sub>, R<sub>6</sub>, R<sub>7</sub> and R<sub>8</sub> are the same or different, each being hydrogen; a linear or branched alkyl or alkoxy group of 1-20 carbons; an aryl group which is unsubstituted or substituted with at least one substituent group selected from the group consisting of linear or branched alkyl and alkoxy groups of 1-20 carbons; a linear or branched alkyl or alkoxy group of 1-20 carbons having at least one

hetero-atom selected from the group consisting of F, S, N, O, P and Si; an aryl group which is substituted with at least one substituent group selected from the group consisting of linear or branched alkyl and alkoxy groups of 1-20 carbons containing at least one hetero-atom selected from the group consisting of F, S, N, O, P and Si; an aryl group having a heterocyclic moiety of 2-24 carbons which is unsubstituted or substituted with at least one substituent group selected from the group consisting of linear or branched alkyl and alkoxy groups of 1-20 carbons; an aryl group having a heterocyclic moiety of 2-24 carbons which is substituted with at least one substituent group selected from the group consisting of linear or branched alkyl and alkoxy groups of 1-20 carbons containing at least one hetero-atom selected from the group consisting of F, S, N, O, P and Si; a substituted or unsubstituted trialkylsilyl group of 3-40 carbons; a substituted or unsubstituted arylsilyl group of 3-40 carbons; a substituted or unsubstituted carbazole group of 12-60 carbons; a substituted or unsubstituted phenothiazine group of 6-60 carbons; or a substituted or unsubstituted arylamine group of 6-60 carbons; a, b, c and d are the same or different, each being an integer of 1-3; Ar is selected from the group consisting of a substituted or unsubstituted aromatic moiety of 6-60 carbons, a substituted or unsubstituted heteroaromatic moiety of 2-60 carbons, and combinations thereof; and l is an integer of 1-100,000, m is an integer of 0-100,000, and n is an integer of 1-100,000.

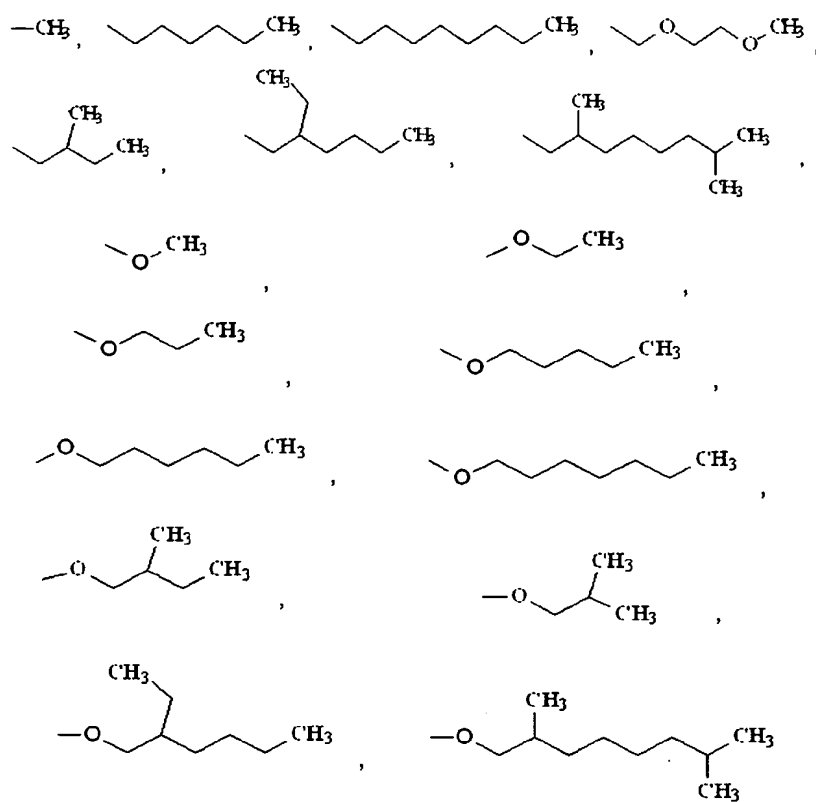
[2] The organic electroluminescent polymer as set forth in claim 1, wherein said  $R_1$ ,  $R_2$ ,  $R_3$  and  $R_4$ , respectively are selected from the following group:

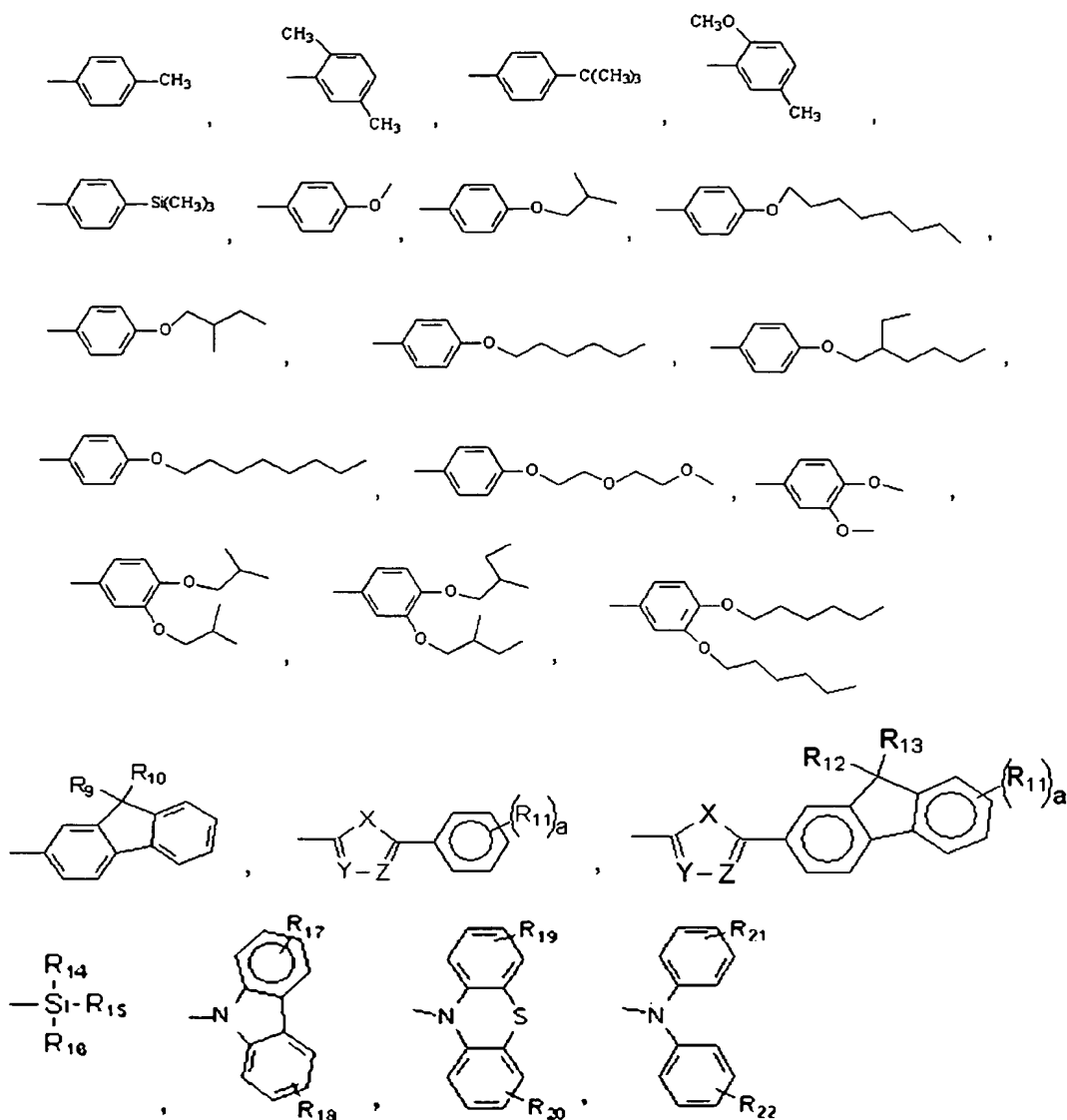




[3]

The organic electroluminescent polymer as set forth in claim 1, wherein said  $R_5$  and  $R_6$ , respectively are selected from the following group:  
H,





wherein,  $\text{R}_9$  and  $\text{R}_{10}$  are the same or different, and respectively are a linear or branched alkyl group of 1-20 carbons;

$\text{R}_{11}$  is hydrogen or a linear or branched alkyl, alkoxy or trialkylsilyl group of 1-20 carbons;

$\text{R}_{12}$  and  $\text{R}_{13}$  are the same or different, and respectively are a linear or branched alkyl group of 1-20 carbons;

$\text{R}_{14}$ ,  $\text{R}_{15}$  and  $\text{R}_{16}$  are the same or different, and respectively are a linear or branched alkyl or alkoxy group of 1-20 carbons; or an aryl group which is unsubstituted or substituted with at least one substituent group selected from the group consisting of linear or branched alkyl and alkoxy groups of 1-20 carbons;

$\text{R}_{17}$ ,  $\text{R}_{18}$ ,  $\text{R}_{19}$ ,  $\text{R}_{20}$ ,  $\text{R}_{21}$  and  $\text{R}_{22}$  are the same or different, and respectively are hydrogen; a linear or branched alkyl or alkoxy group of 1-20 carbons; or an aryl

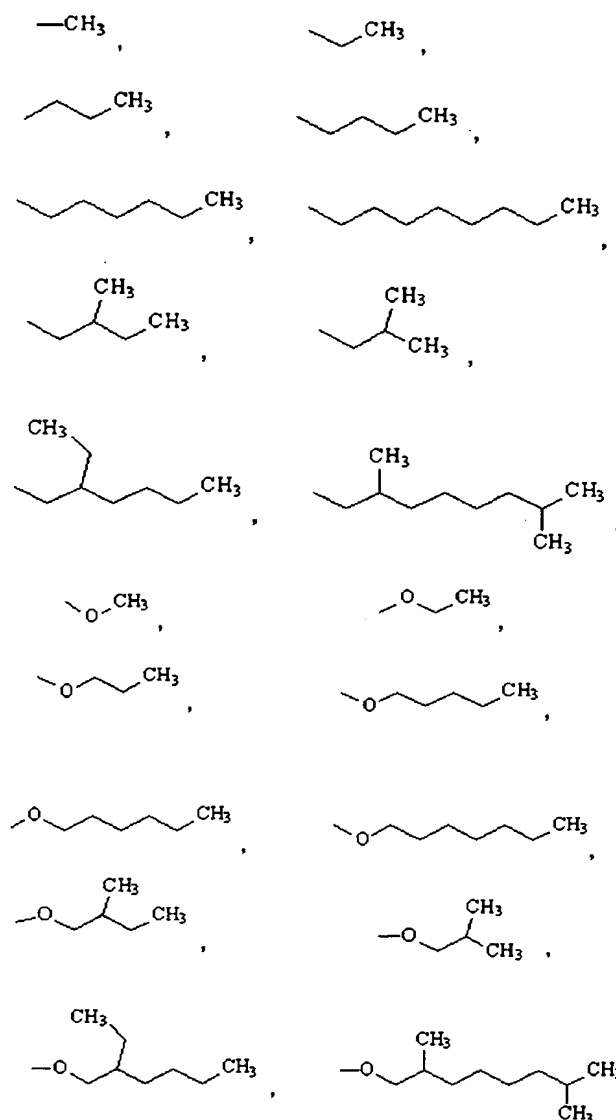
group which is unsubstituted or substituted with at least one substituent group selected from the group consisting of linear or branched alkyl and alkoxy groups of 1-20 carbons;

X is O or S;

Y and Z are N; and

a is an integer of 1-3.

- [4] The organic electroluminescent polymer as set forth in claim 1, wherein said  $R_7$  and  $R_8$ , respectively are selected from the following group:  
H,

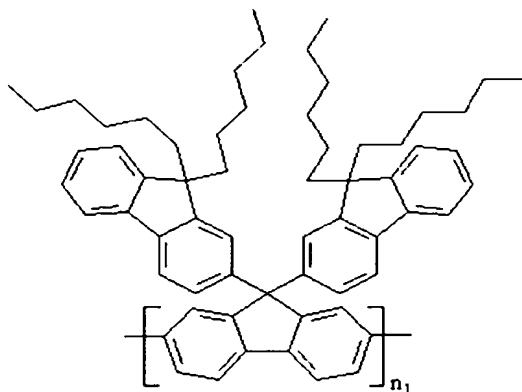


- [5] The organic electroluminescent polymer as set forth in claim 1, wherein said Ar is selected from the following group:  
(i) a substituted or unsubstituted arylene group of 6-60 carbons;

- (ii) a substituted or unsubstituted heterocyclic arylene group of 2-60 carbons in which at least one hetero-atom selected from the group consisting of N, S, O, P and Si is incorporated in an aromatic ring;
- (iii) a substituted or unsubstituted arylenevinylene group of 6-60 carbons;
- (iv) a substituted or unsubstituted arylamine group of 6-60 carbons;
- (v) a substituted or unsubstituted carbazole group of 12-60 carbons; and
- (vi) combinations thereof,

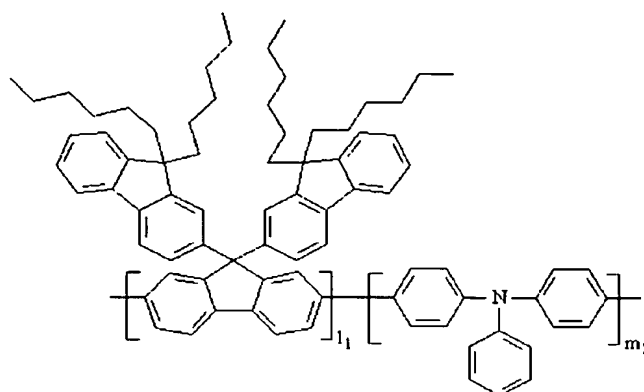
in which Ar may include a substituent selected from the group consisting of a linear or branched alkyl or alkoxy group of 1-20 carbons; an aryl group which is unsubstituted or substituted with at least one substituent group selected from the group consisting of linear or branched alkyl and alkoxy groups of 1-20 carbons; a cyano group (-CN); and a silyl group.

- [6] The organic electroluminescent polymer as set forth in claim 1, wherein a ratio of l:m ranges from 5:95 to 95:5.
- [7] The organic electroluminescent polymer as set forth in claim 5, wherein said Ar is present in an amount of 5-15 mol% in the electroluminescent polymer, with proviso of being a substituted or unsubstituted arylamine group of 6-60 carbons.
- [8] The organic electroluminescent polymer as set forth in claim 1, wherein the organic electroluminescent polymer has the following Formula 2:  
Formula 2



wherein,  $n_1$  is an integer from 1 to 100,000.

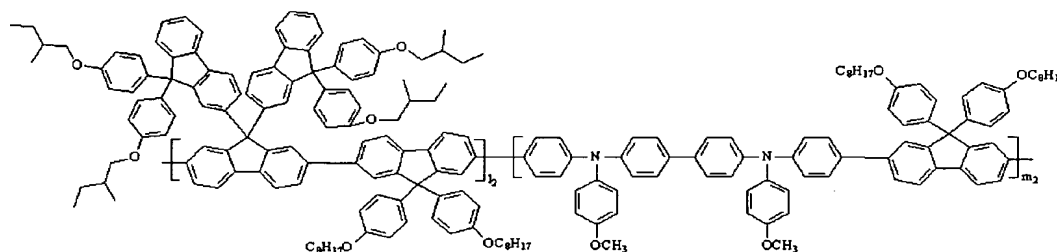
- [9] The organic electroluminescent polymer as set forth in claim 1, wherein the organic electroluminescent polymer has the following Formula 3:  
Formula 3



wherein,  $l_1$  is an integer from 1 to 100,000, and  $m_1$  is an integer from 1 to 100,000.

- [10] The organic electroluminescent polymer as set forth in claim 1, wherein the organic electroluminescent polymer has the following Formula 4:

Formula 4



wherein,  $l_2$  is an integer from 1 to 100,000, and  $m_2$  is an integer from 1 to 100,000.

- [11] An organic electroluminescent device having at least one layer comprising the polymer according to claim 1 between an anode and a cathode, wherein, the layer is a hole-transport layer, a light emitting layer, an electron-transport layer or a hole blocking layer.
- [12] The organic electroluminescent device as set forth in claim 11, wherein the electroluminescent device comprises a structure of anode/light emitting layer/cathode, anode/hole transport layer/light emitting layer/cathode, or anode/hole transport layer/light emitting layer/electron transport layer/cathode.